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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/657,172

09/09/2003

Satoru Horita

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EXAMINER

PETERSON, CHRISTOPHER K

ART UNIT

PAPER NUMBER

2622

NOTIFICATION DATE

DELIVERY MODE

11/12/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/657,172

Applicant(s)

HORITA, SATORU

Examiner

CHRISTOPHER K. PETERSON

Art Unit

2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period **will** apply and **will** expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply **will**, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 August 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 10-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/11/2008 has been entered.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 8/12/2008 and 10/3/2008 were filed after the mailing date of the Request for Continued Examination (RCE) on 8/11/2008. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Objections

3. Claim 14 is objected to because of the following informalities:

Claim 14 cites "low-pass filtering **said the** second luminance data". Claim 14 can read either "said" or "the", but not both.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1, 5, 8, 13-16, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazaki (Japanese Unexamined Patent # Sho-63-234937) in view of Masami (Japanese Patent # 08-163408).

As to claim 1, Miyazaki (Fig. 1) teaches a filtering device which filters original image data, said original image data having original luminance data and color difference data, comprising:

- a generating processor (matrix circuit 18 and 21) that generates first luminance data (Y) and second luminance data (S) (Page 6, line 23 – Page 7, line 16). Miyazaki teaches two matrix circuits (18 and 22) both take the RGB signal and convert it into luminance (Y) and color difference signals (R-Y and B-Y).
- a synthesizing processor (NTSC encoder 25 and adder 23) that synthesizes said first luminance data (Y from matrix circuit 18), said color difference data (R-Y and B-Y from matrix circuit 18), and said third luminance data (Y(dout) from Masami) into synthesized image data, without synthesizing filtered color difference data (Page 7, lines 11 – 20). Miyazaki shows in figure 1 the color difference signal going to the NTSC encoder has not gone through any type of filtering.

Miyazaki does not teach predetermined ratio or a filtering processor. Masami reference teaches a device used to correct an image from a television receiver, VTR, a video camera, or a printer as it relates to a suitable noise detection circuit, a noise rejection circuit, and an edge enhancement circuit. Masami (Drawing 19) teaches:

- a generating processor (smoothing machine 54B) that generates first luminance data (Y) and second luminance data (S) such that said original luminance data (Y(din)) is separated into said first luminance data (Y(din)) and said second luminance data (Y(ave)) according to a predetermined ratio (weighing factor p) (Para 119 and 120).
- a filtering processor (coefficient variable filter 83) that filters said second luminance data by a low-pass filter so as to transform said second luminance data (Y(ave)) into third luminance data (Y(dout)) while the first luminance data (Y(din)) and the color difference data are not low-pass filtered (Para 107 – 109, 114, and 118 -120); and,
- wherein the third luminance data (Y(dout)) defines a blurred luminance image and the synthesized image data comprises a soft focus image in which the color balance of the original image data is preserved (Para 121).

Masami teaches a smoothing luminance data (Y(ave)).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided predetermined ratio of luminance or a filtering processor as taught by Masami to the endoscope device of Miyazaki, to provide

a noise detection circuit, a noise rejection circuit, and edge enhancement circuit without the high cost of a frame memory requirement (Para 10 and 11).

As to claim 13, this claim differs from claim 1 only in that the claim 1 is a filtering device apparatus claim whereas claim 13 is a digital camera with filtering device. Thus method claim 13 is analyzed as previously discussed with respect to claim 1 above.

As to claim 14, this claim differs from claim 1 only in that the claim 1 is an apparatus claim whereas claim 14 is a method. Thus method claim 14 is analyzed as previously discussed with respect to claim 1 above.

As to claim 5, Miyazaki teaches a generating processor (18 and 21) generates said first luminance data (Y) and said second luminance data (S) independently (Page 6, line 23 – Page 7, line 10).

As to claim 8, Masami teaches a predetermined ratio is selected from a stepwise series of predetermined ratios (weighing factor p) (Para 118 - 120). Masami shows the equation to determine the weighing factor p in equation 9 (above Para 117). The equation shows three steps.

As to claims 19 and 20, these claims differ from claim 5 only in that the claim 5 is dependent on claim 1 whereas claim 19 and 20 are dependent on claims 14 and 13 respectively. Thus claims 19 and 20 are analyzed as previously discussed with respect to claim 5 above.

As to claims 15 and 16, these claims differ from claim 8 only in that the claim 8 is dependent on claim 1 whereas claims 15 and 16 are dependent on claims 13 and 14

respectively. Thus claims 15 and 16 are analyzed as previously discussed with respect to claim 8 above.

6. Claim 2 – 4, 10, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazaki (Japanese Unexamined Patent # Sho-63-234937) in view of Masami (Japanese Patent # 08-163408) and further in view of Luo (US Patent 7,031,549).

As to claim 2, note the discussion above. Miyazaki in view of Masami do not teach an image reduction processor and an image restoration processor. Luo (Fig 2) teaches:

- an image reduction processor (decompose quantized gray scale component into n-binary levels (203)) which reduces the image resolution corresponding to said second luminance data before said filtering processor filters (morphologically filter (204)) said second luminance data (Col. 3, line 29 – 59); and
- an image restoration processor recombine filter binary levels into gray level image to produce segmentation result (205) which restores the image resolution, which has been reduced by said image reduction processor (203), after said filtering processor (204) filters said second luminance data (Col. 4, line 29 – 33).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided an image reduction processor and an

image restoration processor as taught by Luo to the endoscope device of Miyazaki in view of Masami, because it enhances the tone reproduction of the digital image (Col. 1, line 66 – Col. 2, line 7 of Luo).

As to claim 3, Luo teaches a second filtering processor (low-pass filter grayscale component via control of segmentation results (206)) which filters said second luminance data which has been filtered by said filtering processor (204) once already, after said image restoration processor (205) restores said image resolution (Col. 4, lines 34 – 52).

As to claim 4, Luo teaches an image resolution is selectable from a stepwise series of predetermined resolutions (Col.3, lines 29 – 42).

As to claim 10, this claim differs from claim 2 only in that the claim 2 is dependent on claim 1 whereas claim 10 is dependent on claim 8. Thus claim 10 is analyzed as previously discussed with respect to claim 2 above.

As to claim 21, this claim differs from claim 2 only in that the claim 2 is dependent on claim 1 whereas claim 21 is dependent on claim 14 respectively. Thus claim 21 is analyzed as previously discussed with respect to claim 2 above.

1. Claims 6, 7, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazaki (Japanese Unexamined Patent # Sho-63-234937) in view of Masami (Japanese Patent # 08-163408) and further in view of Kato (US Patent 7,136,100).

As to claim 6, note the discussion above. Miyazaki in view of Masami do not teach original image undergoes a gamma correction using a first gamma curve so as to generate said first luminance data. Kato (Fig. 3) teaches an original image undergoes a gamma correction (19) using a first gamma curve so as to generate said first luminance data (Col. 5, line 62 – Col. 6, line 19). Kato also teaches different gamma curves (19e) (Col. 5, line 62 – Col. 6, line 19). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided a gamma correction as taught by Kato to the endoscope device of Miyazaki in view of Masami, to obtain high-quality image data while preventing deterioration of image quality (Col. 2, lines 4 – 8 of Kato).

As to claim 7, Kato teaches a second gamma curve is selected from a stepwise series of predetermined gamma curves (19e) (Col. 5, line 62 – Col. 6, line 19).

As to claims 17 and 18, these claims differ from claim 6 only in that the claim 6 is dependent on claim 1 whereas claims 17 and 18 are dependent on claims 13 and 14 respectively. Thus claims 17 and 18 are analyzed as previously discussed with respect to claim 6 above.

2. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazaki (Japanese Unexamined Patent # Sho-63-234937) in view of Masami (Japanese Patent # 08-163408) and further in view of Luo (US Patent 7,031,549) as applied to claim 10 above, and further in view of Kato (US Patent 7,136,100).

As to claim 11, this claim differs from claim 6 only in that the claim 6 is dependent on claim 5 whereas claim 11 is dependent on claim 10. Thus claim 11 is analyzed as previously discussed with respect to claim 6 above.

3. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazaki (Japanese Unexamined Patent # Sho-63-234937) in view of Masami (Japanese Patent # 08-163408) and further in view of Luo (US Patent 7,031,549) further in view of Kato (US Patent 7,136,100) as applied to claim 11 above, and further in view of Jogo (US Patent 6,940,620).

As to claim 12, Jogo teaches the extent of the soft focus can be changed. Jogo teaches a soft focus control box (86) (Col. 7, lines 29 – 38). The switch can be moved to add or subtract soft focus effect (Fig. 9 of Jogo). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided a soft focus as taught by Jogo to the image processor of Kato, because it is possible to reduce the moiré in the grayscale image without lowering the image quality (Col. 1, lines 58 – 65 of Jogo).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER K. PETERSON whose telephone number is (571)270-1704. The examiner can normally be reached on Monday - Friday 6:30 - 4:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tran Sinh can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C. K. P./
Examiner, Art Unit 2622
3 Nov 2008

/Sinh N Tran/
Supervisory Patent Examiner, Art Unit 2622